CONSTANTINESCU, O.

Some new micromycetes identified in Rumania. p. 453.

COMUNICARILE. Bucuresti. Vol. 9, no. 5, May 1959.

Monthly List of East European Accessions (EEAI) LC, Vol. 9, no. 1, January 1960.

Uncl.

CONSTANTINESCU, Ovidiu

Mycoflora of Rumania. Comunicare AR 11 no.6:679-687 Je '61.

1. Comunicare prezentata de Alice Savulescu, membru corespondent al Academiei R.P.R.

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00030932(

CONSTANTINESCU, P.

About the decrease of the numbers of contacts by using bridge circuits. p. 45.
(ŞNALELE. SERIA STIINTELOR NATURII. Rumania. Vol. 5, no. 11, 1956)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 7, July 1957. Uncl.

CONSTANTINESCU, P.

About the reduction of the number of contacts in introducing bridge circuits; direct conjugate conductivties. p. 399.
(STUDII SI CERCETARI MATEMATICE. Rumania. Vol. 7, no. 3/4, July/Dec. 1956)

SO: Monthly List of East European Accessions (EAL) LC, Vol. 6, no. 7, July 1957. Uncl

RUMANIA

NICOLAU, Cl., Conf. Dr., TOMAS, E.; OLINESCU, R.; CHRISTEA, Al., CONSTANTINESCU, Rodica; and STROESCU, Eugenia

"Activity of 2-Methyl-1, 4-Naphthoquinone Sodium Bisulfite(Vitamin K3) on Some Redox Enzymes"

Bucharest, Revista Sanitara Militara, Vol 16, Special No., 1965; pp 389-393

Abstract: In vitro studies to pinpoint mode of radiosensitizing effect of Vitamin K3 in study with ceruloplasmin, catalase, peroxidase, d-amino-acidoxidases. Results indicate that K3 vitamin has profound effect inhibiting or potentiating the enzymatic activities depending on its concentration. This is probably the mode of action of Vitamin K3 as radiosensitizer.

1/1

~~[illegible] Radu~~ V
~~Surname (in caps); Given Names~~

Country: Rumania

Academic Degrees: Engineer

Affiliation: Member, Commission on Automation of the RPR Academy (Membru in Comisia de Automatica a Academiei RPR).

Source: Bucharest, Stiinta si Tehnica (Supplement), No 4, 1961, pp 5.

Data: "The Home of the Cosmonaut."

CONSTANTINESCU, S.

SPIRCHEZ, T., Conf.; STOICHITA, S., dr.; MARINESCU, E., dr.; SCHIAU, S., dr.; DULGHERU, Carmen, dr.; CONSTANTINESCU, S.; TACORIAN, S., dr.; ALOMAN, Lucia, dr.; IONESCU, F.; STOICA, M.; CLEJAN, L.; ALOMAN, N.

Physiopathology of dystonia of the afferent loop and of hepato-biliary disorders in the gastrectomized. Med. int., Bucur. 9 no.2:231-247 Feb 57.

1. Lucrare efectuata in Clinica medicala si terapeutica nr. V, Bucuresti (director, conf. T. Spirchez).

(GASTRECTOMY, complications
postop. afferent loop synd. & hepato-biliary disord.)
(GASTROINTESTINAL DISEASES
post-gastrectomy dystonia of afferent loop & hepato-biliary disord.)
(LIVER DISEASES
post-gastrectomy hepato-biliary disord.)
(BILIARY TRACT, diseases
(SAME)

CONSTANTINESCU, S.

SPIRCHEZ, T., Conf.; STOICHITA, S., dr.; MARINESCU, E., dr.; SCHIAU, S., dr.; DULGHERU, C., dr.; CONSTANTINESCU, S.; TACORIAN, S., dr.; ALOMAN, L., dr.; IONESCU, F., dr.; STOICA, M., dr.; TACORIAN, L., dr.; ALOMAN, N., dr.

Clinical study of dystonia of the afferent loop and hepato-biliary disorders in gastrectomized patients. Med. int., Bucur. 9 no.3:350-365 Mar 57.

1. Lucrare efectuata in Clinica a V-a medicala si terapeutica Bucuresti, director conf. T. Spirchez.

(GASTRECTOMY, complications
postop. afferent loop synd., case reports)
(BILIARY TRACT, diseases
post-gastrectomy disorders, case reports)

CONSTANTINESCU, S.; TEODORESCU, B.; SANIELEVICI-MARINOV, S.; CUNESCU, V.; IACOB, A.; SCHMITZER, G.; VULCANESCU, M.; MARINOV, M.; VASILESCU, C.; LICHTENBERG, R.; BARCAN, F.; BANESCU, E.; BERNSTEIN, D.

Mass clinical and radiological detection (by radiophotography) of carditis in school-age children. Probl. reumat., Bucur. no.5:79-82 1958.
(RHEUMATIC HEART DISEASE, prevention & control
in school-aged child. in Rumania, clin. & radiol. diag.)

PARHON,C.I.,acad.; CRACIUN,E.,prof.; ASLAN,Ana,prof.; MAREA,Viorica; VELCIU,V.; DAVID,I.; ZAHARIA,Maria; CONSTANTINESCU,Smaranda; TASCA,C.; POPOVICI,M.

Tissular changes and lesions related to the pathology of the aged. Rumanian M. Rev. 3 no.3:3-11 Jl-S '59.
(GERIATRICS, pathology)

CRACIUN,E.,prof.; ZAHARIA,Maria; CONSTANTINESCU,Smaranda; MARES,Viorica

Histochemical investigations in geriatrics. Rumanian M. Rev. 3 no.3:21-22 Jl-S '59.
(METABOLISM in old age)

SPIRCHEZ, T., prof.; GHEORGHESCU, B.; MERCULIEV, E.; VOICULET, N.; CONSTANTINESCU, S.; STOICHITA, S.; DULGHERU, C.; TACORIAN, S.; RUSSU, M.

A study by means of radioactive isotopes of the blood volume and of the exchanged between the peritoneal cavity and the blood in cirrhosis. Rumanian M Rev. no.2:15-18 Ap-Je '60.

(LIVER CIRRHOSIS complications) (BLOOD VOLUME)
(ASCITES etiology)

MANDACHE, Fl.; PRODESCU, V.; TEODORESCU, M.; CONSTANTINESCU, S.

Considerations on intestine transplants. Rumanian M Rev. no.4:63 O-D '60.

(INTESTINES transplantation)

KLEINERMAN, L. conf.; CONTANTINESCU, Anca, CONSTANTINESCU, Stela

Extra- and intra-cellular potassium changes in patients without edema treated with thiazides. Med. intern. (Bucur.) 10 no.5:557-561 My '64

1. Lucrare efectuata la A.S.C.A.R., Bucuresti (director: prof. C.C. Iliescu).

DUMITRESCU, Maria, dr.; GOLESCU, Maria, dr.; SPINER, Frima, dr.; CONSTANTINESCU, S., dr.

On several cases of whooping cough and tuberculous meningitis with abdominal primary complex caused by a tubercle bacillus resistant to antibiotics. Med. int., Bucur. 12 no.1:111-117 Ja '60.

1. Lucrare efectuata in Clinica de boli contagioase I.M.F., Bucuresti, director: prof. M. Voiculescu.
(TUBERCULOSIS, MENINGEAL, complications)
(WHOOPING COUGH, complications)
(ANTITUBERCULAR AGENTS, therapy)

FRONESCU,E.,dr.; PETRONIU,L.,dr.; CONSTANTINESCU,S.,chimist

Study of renal elimination of water during chronic hepatitis.
Med. int.,Bucur. 12 no.2:269-277 F '60.

1. Lucrare efectuata in Clinica a V-a medicala, I.M.F.,Bucuresti.
(HEPATITIS, metabolism)
(WATER,metabolism)
(LIVER,metabolism)

MANDAKE, F.; PRODESCU, V.; CONSTANTINESCU, S.

Surgical treatment of rectal cancer. Khirurgiia 36 no.2:49-53 F '60. (MIRA 13:12)

(RECTUM—SURGERY)

CONSTANTINESCU, S

MANDAKE, F. [Mandache, F.]; PRODESKU, V. [Prodescu, V.]; DZHILORTYANU, M. [Djilortianu, M.]; KONSTANTINESKU, S. [Constantinescu, S.]; LUTSESKU, I. [Lucescu, I.]

Surgical treatment of peptic ulcer. Khirurgiia 36 no.12:61-~~68~~ 160. (MIRA 14:1)

1. Iz khirurgicheskoy kliniki bol'nitsy Brynkovenesk (zav. - dotsent F. Mandake), Bukharest.
(STOMACH--SURGERY)

ZUGRAVESCU, I.; MOTOC, Florica; CONSTANTINESCU, Smaranda; CONSTANTINESCU, C.

Biochemistry and histology of some experimental hepatic lesions.
Studii cerc biochimie 4 no.3:339-347 '61.

1. Institutul de anatomie patologica "Dr. V. Babes", Bucuresti.

SURNAME, Given Name
CONSTANINESCU, S.
Country: Rumania

Academic Degrees: -not given-

Affiliation: *)

Source: Timisoara, Timisoara Medicala, Vol VI, No 1, Jan-Jun 1961, pp 33-37.

Data: "Reanimation in Terminal Collapse State With Transfusions of Oxygenated Blood Through Artificial Heart-Lungs."

Authors:

MANDACHE, F.
MATEESCU, D.
PRODESCU, V.
KOVER, Gh.
ROSCA, S.
CIOPALA, E.
MATEICA, Monica
CONSTANTINESCU, S.
LUTESCU, I.
CANTARGIU, Sofia
TANCIU, I.

*) Work performed at the Surgical Clinic of "Brincovenesc" Hospital (Clinica de Chirurgie a Spitalului "Brincovenesc"), Director: F. MANDACHE.

GPO 981643

SPIRCHEZ, T., prof.; STOICHITA, S., dr.; TACORIAN, S., dr.; RUSSU, M., dr.; SCHIAU, S., dr.; CONSTANTINESCU, S., chimist; CLEJAN, L., chimist; BANDU, L., dr.

Secretory and motor disorders in the function of the operated stomach. Med. intern., Bucur 13 no.2:201-210 F '61.

(GASTRECTOMY complications)
(STOMACH physiology)

MOTOC, Florica; CONSTANTINESCU, Smaranda

Capacity of liver transamination during the neoplastic process. Studii cerc biochimie 5 no.1:91-95 '62.

1. Laboratorul de chimie al Institutului "Dr. V. Babes," Bucuresti.

BRUCKNER, Silvia, conf.; TEODORESCU, Tatiana, dr.; IOANESI, Iulia, dr.; TEODORESCU, G., dr.; CONSTANTINESCU, S., dr.; COTARCEA, S., dr.; ISBASESCU, C., chimiste; GARIBALDI, A.

The role of bacterial superinfection in the evolution of epidemic hepatitis. Med. intern. 14 no.4:423-432 Ap '62.

1. Lucrare efectuata in Clinica de boli infectioase nr. 1, I.M.F. (director: prof. M. Voiculescu).
(HEPATITIS, INFECTIOUS) (STAPHYLOCOCCAL INFECTIONS)
(STREPTOCOCCAL INFECTIONS) (PNEUMONIA) (OTITIS MEDIA)

MANDACHE, F.; PRODESCU, V.; CONSTANTINESCU, S.; KOVER, G.; STANCIULESCU, P.

Sympathectomy associated with adrenalo-omentopexy. A method for portal derivation of the circulation of the adrenal glands. Rumanian med. rev. no.2:63-70 '62.
(SYMPATHECTOMY) (ADRENAL GLANDS) (PORTAL SYSTEM)

ILIESCU, C.C., prof.; ROMAN, L., dr.; ILIESCU, M., dr.; IACOBINI, P., dr.; NITU, S.; CONSTINTINESCU, S.; CONSTANTINESCU, A.; GHEORGHIU, C.

The action of unsaturated fatty acids on blood lipids in arteriosclerosis. Med. intern. 14 no.12:1433-1442 D '62.

1. Lucrare efectuata la ASCAR, Bucuresti.
(BLOOD LIPIDS) (ARTERIOSCLEROSIS) (FATTY ACIDS)
(BLOOD CHOLESTEROL)

BRUCKNER, Silvia, conf.; TEODORESCU, Tatiana, dr.; TEODORESCU, Geta, dr.; IOANESI, Iulia, dr.; CONSTANTINESCU, Sanda, dr.; COTARCEA, Sofia, dr.; IZBASESCU, Aretia, chimist; GARIBALDI, Anastasia, chimist

Investigations concerning the factors determining the evolution of epidemic hepatitis in children. The role of viral superinfections. Med. intern. 15 no.2:179-184 F '63.

1. Lucrare afectuata in Clinica de boli contagioase I.M.F., Bucuresti.
(HEPATITIS, INFECTIOUS) (MEASLES) (MEASLES, GERMAN)
(CHICKENPOX) (MUMPS) (RESPIRATORY TRACT INFECTIONS)
(VIRUS DISEASES)

ILIESCU,N., dr.; DOMOCOS,G., dr.; IACOBINI,P., dr.; CONSTANTINESCU,S.,chim.; ILIESCU,C.C., prof.

Prolonged treatment with large doses of nicotinic acid in coronary arteriosclerosis. Med. intern. 16 no.3:301-310 Mr '64.

1. Lucrare efectuata la A.S.C.A.R., Bucuresti.

*

ILIESCU, C.C., prof.; ILIESCU, Matei, dr.; ROMAN, L., dr.; IACOBINI, P., dr.; CONSTANTINESCU, S., chimisti; NUTU, S.

The action of nicotinic acid on blood lipids in atherosclerosis. Med. intern. 15 no.1:39-49 Ja '63.

1. Lucrare efectuata in Centrul de asistenta a cardiacilor A.S.C.A.R., Bucuresti.

(ARTERIOSCLEROSIS) (NICOTINIC ACID)
(BLOOD LIPIDS)

(4)

ROMANIA

ILIESCU, C. C., Professor; ILIESCU, Natoi, MD; DOMOCOS, G., MD; IACOBINI, P., MD; CONSTANTINESCU, S., Chemist; NITU, S., Chemist.

Bucharest, Viata Medicala, No 1, 1 Jan 64, pp 9-17

"Essential Hyperlipaemia Associated with Atherosclerosis (Effects of Nicotinic Acid)."

(5)

MIHAILESCU, V.V.; IONESCU, R.; VINTILA, P.; BOGDAN, I.; CELSOO, E.; CONSTANTINESCU, S.; CONSTANTINESCU, A.

Diagnostic value of changes of serum concentration of glutamic-oxaluacetic transaminase in coronary disease. Med. corect. med. intern. 5 no.6:623-626 '64.

MANDACHE, Fl.; PRODESCU, V.; TEODORESCU, M.; CONSTANTINESCU, S.; VASILIU, M.

The place of broad gastric resection with gastroduodenal anastomosis in the surgical treatment of gastroduodenal ulcer. (Indications, contraindications, technique, immediate and late results). Rumanian med. rev. 19 no.1:58-64 Ap-Je'65.

POPA, I., ing.; SULER, S., ing.;GORAN, V., ing.; Constantinescu, S., ing.

Mechanizing concrete central stations. Rev constr si mat constr 15 no.10:529-535 O '63.

1. Institul de cercetari in constructii si economia constructiilor (for Suler, Goran). 2. I.C.M.B. (for Constantinescu).

L 45248-66 T JK

ACC NR: AP6033594 SOURCE CODE: RU/0023/65/010/004/0373/0374

AUTHOR: Constantinescu, S. P. (Doctor) 16 B

ORG: Bacteriological Laboratory, ISIPM, Gaesti Raion (Laboratorul de bacteriologie ISIPM) 6

TITLE: Semiautomatic distributor of antibiotic powders and tablets required for antibiograms

SOURCE: Microbiologia, parazitologia si epidemiologia, v. 10, no. 4, 1965, 373-374

TOPIC TAGS: antibiotic, medication distributor

ABSTRACT: The author describes a simple device used for the distribution of antibiotic powder or tablets in specified amounts. The essential parts of the distributor are two polystyrene cylinders and a perforated disc. Orig. art. has: 1 figure. [JPRS: 32,913]

SUB CODE: 06 / SUBM DATE: 01Apr65

Card 1/1 tdk UDC: 615.779.93-092.257:615.475

0920 1637

CONSTANTINESCU, S.P., dr.

Semi-automatic distributor for antibiotic powders or tablets for antibiograms. Microbiologia (Bucur.) 10 no.4:373-374 Jl-Ag '65.

1. Lucrare efectuata in Laboratorul de bacteriologie al I.S.I.P.M. raionul Gaesti, Regiunea Arges (director: dr. E. Cioran).

RUMANIA 576.85.07:535.24

ALTESCU, E. I., Dr, and CONSTANTINESCU, S. P., Dr. Work performed at the State Health Inspectorate of Gaesti Raion (Inspectoratul Sanitar de Stat) Arges Regiune.

"Photometric Measurement of Bacterial Growth."

Bucharest, Microbiologia, Parazitologia, Epidemiologia, Vol 11, No 6, Nov-Dec 66, pp 501-509.

Abstract [Authors' English summary modified]: The authors studied the influence of a number of factors on the photometric measurement of bacterial growth. Experimental results are presented to illustrate the variation of the results in terms of the optical path, the concentration, size and shape of the bacterial cells, the wave length and the refraction index of the cells.

Includes 3 figures and a bibliography with 43 entries, of which one Rumanian, 6 German, 7 Dutch and 29 English-language. -- Manuscript submitted 5 April 1966.

CONSTANTINESCU, T.

Distr: 4E3d

Determination of mercaptans in gasoline. M. Constantinescu and T. Constantinescu. *Lucrările inst. petrol. şi gaze Bucureşti* 3, 353-63(1957).—The decompn. of $Fe(SCN)_3$ in the presence of Ag mercaptide and the retention of $AgNO_3$ and Ag_2O in the Ag mercaptide ppt. are the main causes of inaccuracy in the volumetric detn. of mercaptans in gasoline by the Volhard and Klason method.

R. D. Slănicеanu

CONSTANTINESCU T.

Study of the catalytic synthesis of mercaptans from alcohols and hydrogen sulfide. M. Constantinescu and T. Constantinescu. *Petrol şi Gaze* (Bucarest) 10, 299–304 (1959).—The catalytic properties of the oxides of the elements of Group IV of the periodic system, Ti, Zr, Hf, and Th, for the production of mercaptans from alcs. and H_2S, were studied (TiO_2 was most efficient), and compared with SnO_2 and SiO_2 and Al_2O_3. The oxides of Group IVB, SiO_2, SnO_2 and probably PbO_2, were unsuitable. As the catalyst forms an ester with the alc. in the first stage, the acidity of the catalyst was of great importance. The more acid TiO_2 was therefore more efficient than the basic ThO_2, which under certain conditions formed unstable esters that were decompd. with H_2S. This was exptl. proved. As best conditions for the formation of mercaptan were found: molar ratio of H_2S to alc. 1.5:1, gas velocity 175 per hr., temp. 316°. Under these conditions 72.6% of the alc. was used, 1% ethylene formed, and 5% H_2S decompd. Better yields were obtained with higher alcs. The thermodynamic calcn. of the equil. const. for various temps. were given.

V. Hoffmann

1 3
1 - Dg (NB)

Distr: 4E3d

The partition of ethyl mercaptan and of a mercaptan mixture between sodium hydroxide solution and gasoline

separatory funnels with a large [illegible] for 2-3 hrs., with Na[illegible] at NaOH/gasoline phase ratios [illegible] Gasoline (50 cc.) was decanted and the residual mercaptan S was detd. by optn. with [illegible] of the mercaptide, and titration of the excess AgNO with NH_4CNS, $Fe_2(SO_4)_3$ serving as indicator after a modified ASTM method reported earlier, cf. C.A. 31, 1937. The gasoline itself should be free of mercaptans S and naphthenic acids. In an aliquot of the NaOH soln. the mercaptans were liberated into gasoline by addn. of H_2SO_4, in another separatory funnel, kept in a cooling mixt., the strongly exothermic reaction [illegible] was washed

were as follows [illegible] EtSH and NaOH takes place in the [illegible] coeff. K is independent of the phase [illegible] satn.; thus, the partition has a linear [illegible] tition tests at 4 temps. yielded a log K [illegible] detg. its equation and the value of [illegible] similar to that of other mercaptans. (c) In mercaptan mixts. the partition is no longer linear and the coeff. K increases with the initial amt. of mercaptan [illegible] not too large concns. the log K [illegible] (e) In log coördinates, log C_A/log C_B (C_B is [illegible] gasoline) in EtSH yields parallel straight lines [illegible] NaOH concn., while in mercaptan [illegible]

function of the values [illegible] phase ratio and [illegible] partition [illegible] mixt.) and the curvature of the lines is a function of the variations of K (for larger amts. of partitioned mercaptan mixts.) the equations are much more complicated [illegible] of the [illegible]

R/007/61/012/001/003/003
A231/A126

AUTHORS: Constantinescu, M., Constantinescu, T. and Fedin, Tamara

TITLE: Contributions to the study of the catalytic condensing of ethylene with hydrogen sulfide

PERIODICAL: Petrol şi Gaze, v. 12, no. 1, 1961, 33 - 43

TEXT: The article presents a solution regarding the production of ethylmercaptan from ethylene and H_2S with the aid of palladious and nickel sulfide catalysts. In a previous work: [Ref. 1: Constantinescu, M., and Constantinescu, T.: "Petrol şi Gaze", no. 7, 1959, 298-304], the authors have shown that mercaptans can be produced by three method groups: i.e. by treating a neutral alkylic monoester (R - SO_4Na) with Na SH; from alkylic halogens (R - Cl) with NaS under pressure, and by catalytic methods. The catalysts allow a synthesis starting with reactants such as ethyl alcohol or ethylene, which directly lead to ethylmercaptan. In the above mentioned work (Ref. 1), the authors have studied the synthesis of mercaptans from lower alcohols. Since in the near future ethylene will be made from cracking gases or chemical reactions of methane, the study has been extended also on the synthesis of ethylene and hydrogen sulfide: $C_2H_4 + H_2S$

Card 1/3

Contributions to the study ...

$\rightleftharpoons C_2H_5SH$. According to the technical literature the photosynthesis with ultraviolet rays has also been studied before beside the above mentioned three methods. The majority of the publications refer to higher olefines, but not to ethylene. On the basis of the foreign literature, the authors have established that only the photochemical method supplied a higher efficiency (80%) for propylmercaptan at a temperature of 0°C. For ethylmercaptan the temperature is lower and the efficiency is negligible. The photochemical method, however, is very difficult to be applied in engineering, and needs an additionally catalyst. The only practical method is the catalytic method after having found a catalyst which supplies corresponding results at a temperature as low as possible and at usual pressure. The oldest examinations were carried out by H.R. Duffey in 1934, who used different catalysts and obtained a maximum ethylene transformation of 23.3% on a nickel catalyst. The task of this work is to find a highly efficient catalyst for the conversion of ethylene into ethylmercaptan. On the basis of the studied literature, the authors could establish that generally the catalysts, which supply a rather weak efficiency for the desired reaction, are the catalysts used also in hydrogenation and dehydrogenation reactions. For this purpose, this field has also been studied and proved to be the right way. A.W. Schultzeps publication [Ref. 4: A.W. Schultze, J.P. Lyon, and G.H. Schort: "Ind. Eng. Chemis-

Card 2/3

try", Ibid: US 2,392.555; 40, 12, 1948] clearly shows that no higher mercaptan efficiency (66%) was obtained even in the presence of a catalyst, except in two recirculating stages with different catalysts for every stage and different pressures, i.e. 33 and 100 atm, when the reactants were partially in liquid phase. The authors' study was conducted to find a solution usable at ordinary pressure, to avoid technical complications, physical condensations, etc. This paper establishes the conditions and main parameters necessary for the transposition to the pilot or industrial scale. There are 5 tables, 1 figure and 9 references: 7 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: Ref. 2: W.F. Vaughan, F.F. Rust, J. Evans: Org.Chem. 7,466,1942. Ref. 4: A.W. Schultze, J.P. Lyon, G.H. Schort: Ind. Eng. Chemistry Ibid.: U.S. 2.392.555; 40, 12, 1948.

SUBMITTED: August 29, 1960

Card 3/3

BERAL, H.; POPESCU, D.; CONSTANTINESCU, T.

Determination of 5,6-dimethylbenzimidazole. Rev chimie Min petr 13 no.1:54 Ja '62.

IONESCU, I.; ENACHE, St.; CONSTANTINESCU, T.

Contributions to the study of determination of the product Cetazol. Rev chimie Min petr 14 no.9:534 S '63.

1. Institutul pentru controlul de stat al medicamentelor si cercetari farmaceutice.

POPA, C.; CONSTANTINESCU, T.

Anticorrosive protection by enamel-chlorine-rubber in the phosphorous fertilizer industry. Rev chimie Min petr 15 no. 5:298 My '64.

BERAL, H.; CONSTANTINESCU, T.

Determination of p-oxypropiophenone in H-365 phrenanthol tablets. Rev chimie Min petr 14 no.4:235-236 Ap '63.

1. Institutul pentru controlul de stat al medicamentelor si cercetari farmaceutice.

SOLOMON-IONESCU, Irina, farm.; ENACHE, Stefania, farm.; CONSTANTINESCU, T., chim.

Contributions to the study of quality conditions for cetazol products. Farm Rum 11 no.11:681-688 N'63.

1. Institutul pentru controlul de stat al medicamentului si cercetari farmaceutice.

CONSTANTINESCU, T., ing.

Considerations of the specific aquifer potential of the A aquifer horizon of the Fratesti Complex in the zone of Bucharest. Meteorologia hidrol gosp 8 no.3: 124-127 '63.

CONSTANTINESCU, T.

FAGARAZANU, I. [Fagarasanu, I.] (Bukharest); KAPRINIZAN TS. (Bukharest); BURLUI, D. (Bukharest); KONSTANTINESKU, TS. [Constantinescu, T] (Bukharest)

Treatment of angina pectoris. Khirurgiia 35 no.10:21-24 O '59. (MIRA 12:12)

(ANGINA PECTORIS surgery)

Gravimetric method for the determination of beryllium in the presence of other elements in alloys and minerals. Th. I. Pirtea and V. Constantinescu (Univ. "C. I. Parhon," Bucharest, Romania). *Z. anal. Chem.* 165, 183-8(1959). —In the presence of (ethylenedinitrilo)tetraacetic acid (I) Cu, Cd, Zn, Co, Ni, Fe, Al, Ti, Mn, Mg, Ca, Na, K, and NH_4^+ do not interfere in the pptn. of $[Co(NH_3)_6][(H_2O)_2Be_2(CO_3)_2(OH)_2].3H_2O$. For the detn. of up to 75 mg. Be in 5–25 ml. of weakly acid soln. add 0.5–1 g. NH_4Cl and 0.5–2 g. I (more if large amts. of Fe^{+++} are present). If a ppt. forms, add 10% NH_4OH dropwise until the ppt. dissolves. Add 2–3 g. powd. $(NH_4)_2CO_3$. Add without mixing 0.5–2 ml. of $Co(NH_3)_6Cl_3$ soln. (II) and wait for the ppt. to start forming. Add an excess of II. Dil. the soln. so that the salt concn. is 2–3%, let stand for 1.5–2 hrs., and filter into a sintered crucible. Wash with 0.2% I, 3–4 times with 3-ml. portions 60% EtOH contg. a few drops 0.2% I, and finally with EtOH and Et_2O. Dry in a vacuum desiccator.

K. G. Steen

Distr: 4E2c

COUNTRY:	:	Rumania	II-15
CATEGORY	:		
ABS. JOUR.	:	RZKhim., No. 5 1960, No.	18700
AUTHOR	:	Donna, A., Mueller, G., and Constantinescu, V.	
INST.	:	Cluj Polytechnic Institute	
TITLE	:	Investigation of the Possibility of the Application of Several New Materials in the Production of Metal-bonded Abrasive Discs by Sintering	
ORIG. PUB.	:	Lucrari Stiint Inst Politehn Cluj, 427-439 (1958)	
ABSTRACT	:	The results from an investigation on the production of abrasive discs by the sintering of SiC and Cu powder mixtures at 1,100° under a methane atmosphere are presented. Discs of 45 and 120 mm diameter and thickness 1-1.5 mm were obtained and tested in the working of hard steel. The technical and economic advantages of the discs compared to Bakelite and rubber-bonded discs are discussed. From authors' summary	

CARD: 1/1

CONSTANTINESCU, V. ing.

Necessity of the metrological checkup of apparatus for the determination of nuclear radiation. Metrologia apl 8 no.4: 176-177 O-D '61.

CONSTANTINESCU, V.

[illegible] RUMANIA

[illegible], [illegible], No 4, [illegible], pp [illegible].

"Contributions to the Study of Iron-Graphite and Iron Copper Graphite Materials."

Co-authors:

[illegible], A.

[illegible], I.

[illegible], V.

[illegible], N.

[illegible], L.

PECULEA, M.

CONSTANTINESCU, V.

CONSTANTINESCU, V., ing.

Use of dekatrons in the apparatus used for nuclear radiation measurements. Metrologia apl 10 no.1:29-33 Ja '63.

CONSTANTINESCU, V., ing.

Protection of the 25 kv. drawbars in the traction substations with monophase V/V transformers. Rev cailor fer 10 no.8: 430-431 Ag '62.

1. Institutul de Cercetari pentru Transporturi si Telecomunicatii.

BUCUR, Elena; CONSTANTINESCU, V.

Onion mildew and fight against it. Comunicarile AR 11 no.5:599-604 My '61.

1. Comunicare prezentata de Alice Savulescu, membru corespondent al Academiei R.P.R.

RUMANIA / Chemical Technology, Chemical Products and Their Application. Pharmaceuticals. Vitamins. Antibiotics. H-17

Abs Jour : Ref Zhur - Khimiya, No 5, 1959, No. 16510

Author : Szanto, A.; Cretu, V.; Constantinescu, V.
Inst : Not given
Title : Experience of the Kluzhskaya Oblast Apothecaries in the Preparation of Injection Serums

Orig Pub : Farmacia (Romin), 1957, 5, No 5, 442-455

CONSTANTINESCU, V.

Some remarks on the proposals of terminology in automatic installations.
p. 227.

AUTOMATICA SI ELECTRONICA. (Asociatia Stiintifica a Inginerilor si Tehnicienilor din Rominia)
Bucuresti, Rumania
Vol. 2, no. 5, Sept./Oct.1958.

Monthly list of Eastern European Accessions Index (EEAI) LC Vol. 8, No. 11
November 1959
Uncl.

CONSTANTINESCU, V.

Extension of the Tsien-Scurlock problem to axial-symmetric movements.

P. 323 (Academia Republicii Populare Romine. Institutul de Mecanica Aplicata. STUDII SI CERECTARI DE MECANICA APLICATA. Vol. 7, no. 2, Apr./June 1956, Bucuresti, Romania)

Monthly Index of EastEuropean Accessions (EEAI) LC. Vol.7, no. 2, February 1958

CONSTANTINESCU, V.

The calculation of bearings with infinite elongation, lubricated with gases, composed of plane surfaces.

p. 741 (Academia Republicii Populare Romine. Institutul de Mecanica Aplicata. Studii Si Cercetari De Mecanica Aplicata. Vol. 7, no. 3, July/Sept. 1956. Bucuresti, Rumania)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 2, February 1958

CONSTANTINESCU, V.

Digital installations for centralized control. p. 62

AUTOMATICA SI ELECTRONICA. (Asociatia Stiintifica a Inginerilor si Tehnicienilor din Rominia) Bucuresti, Rumania. Vol. 3, no. 2, Mar./Apr. 1959

Monthly List of East European Accessions. (EEAI) LC, Vol. 8, no. 9, Sept. 1959
Uncl.

CONSTANTINESCU, V., ing.

Considerations and criteria applied in the selection of means of measurement used in dosimetry. Metrologia apl 8 no.3:136-142 S '61.

VOICU, V.; CONSTANTINESCU, V.; CODITA, V.

Absolute measurement of radiation source activity. Metrologia apl 9 no. 4:176-180 Jl-Ag '62.

GHEORGHE, M., ing.; CONSTANTINESCU, V., chim.; SACHELARESCU, Florica, biolog.; CONSTANTINESCU, O., chim.; CATRINA, I., ing.

Using radioactive isotopes to determine the washability of fungicidal products from antiseptized wood materials. Ind lemnului 15 no.6/7:215-219 Je-Jl '64.

1. Institute of Atomic Physics, Magurele (for Constantinescu, O.).

CONSTANTINESCU, Valentin

A type method of diagram simplification with elements of static commutation. Probleme automatiz 4:43-54 '63.

CONSTANTINESCU, Valentin; MIHAIESCU, Maria; IOSIPESCU, Adrian

Automation equipment with elements without contacts for a transfer line. Probleme automatiz 4:55-62 '63.

CIORTAN, Petre, ing.; CONSTANTINESCU, Victor, ing.

Some problems of the exploitation organization of fixed elektric traction installations. Rev cailor fer 11 no.5:251-255 My '63.

1. I.P.T.Tc.

DOMSA, A.; PALFALVI, A.; BOTHA, L.; NICOLAE, V.; COLAN, H.; SANDOR, L.; FILIPESCU, M.; PECULEA, M.; CONSTANTINESCU, V.

Contributions to elaboration of the Fe-graphite and Fe-Cu-graphite antifriction materials. Bul stiint polit Cluj no.5:243-259 '62.

CONSTANTINESCU, V. (Engr)

FORMULA

CONSTANTINESCU, V., Engr.

Deputy Chairman of the Executive Committee of the Bucharest City People's Council

Bucharest, Igiena, No 6, Nov-Dec 63, pp 565-570

"Enlisting the Interest of the Community for the Health Protection of Construction Workers on the Building Sites in Bucharest."

CONSTANTINESCU, Victor, ing.

Operative safety of stable installations of the railroad electric traction in 25 kw. 50 c.p.s. monophase alternating current. Rev cailor fer 12 no. 7;380-385 Jl '64.

1. Regional Office of the Rumanian Railroads, Brasov.

Division of pressure in bearings of infinite elongations with gas lubrication. p. 377. ACADEMIA REPUBLICH POPULARE ROMANE. Rumania. Vol. 5, No. 2, Feb 1955.

East European Accessions List (EEAL) Library of Congress
Vol 5, No. 11, August 1956.

CONSTANTINESCU, V. N.

Certain properties and solutions for the limits of equations of lubrication with gas. p. 1317. Academia Republicii Populare Romine. COMUNICARILE. Bucuresti. Vol. 5, no. 6, June 1955.

SOURCE: East European Accessions List (EEAL) Library of Congress, Vol. 5, no. 9, Sept. 1955

CONSTANTINESCU, V.

Considerations on the calculation of circular bearings with infinite elongation lubricated with gas. p. 379. Academia Republicii Populare Romine. Institutul de Mecanica Aplicata. STUDII SI CERCETARI DE MECANICA APLICATA. Bucuresti. Vol. 6, no. 3/4, July/Dec. 1955.

So. East European Accessions List Vol. 5, No. 9 September, 1956

RUMANIA

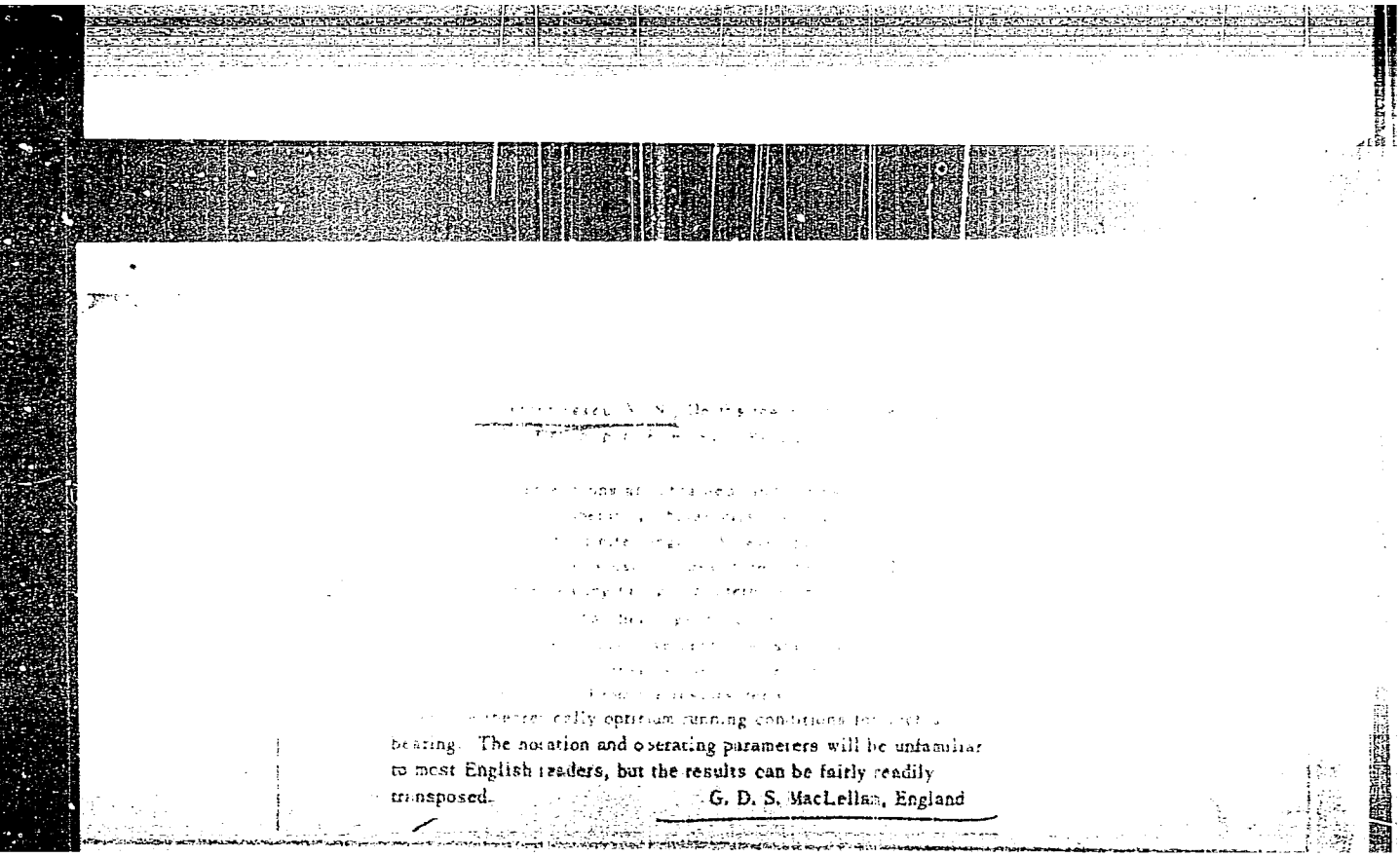
SUTEU, I., Colonel, Medical Corps; VAIDEANU, C., Lieutenant-Colonel, Medical Corps; CONSTANTINESCU, V., Captain, Medical Corps; DANCIULCIU, Al., Major, Medical Corps; IOAN, Gh., Major, Medical Corps; DIMITRIU, R., Major, Medical Corps; and MANCAS, O., Major, Medical Corps.

"Indications and Value of Considerations in Ligation of a Voluminous Hemangioma of the Left Side of the Liver, Operated by Subtotal Left Hepetactomy"

Bucharest, Revista Sanitara Militara, Vol 62, No. 3, May-June 1966; pp 455-465

Abstract: Very detailed anatomical discussion of liver lobules and regional vasculature, leading to description of surgery in 39 year old soldier with liver tumor, a large cavernous hemangioma with satisfactory results and uneventful recovery. 3 anatomical diagrams, 4 photographs of operative stages, 1 photograph of surgical specimen, 1 photomicrogram, 1 liver scintigram with rose bengal. 10 Western, 16 Rumanian references. Manuscript received 10 February 1966.

1/1



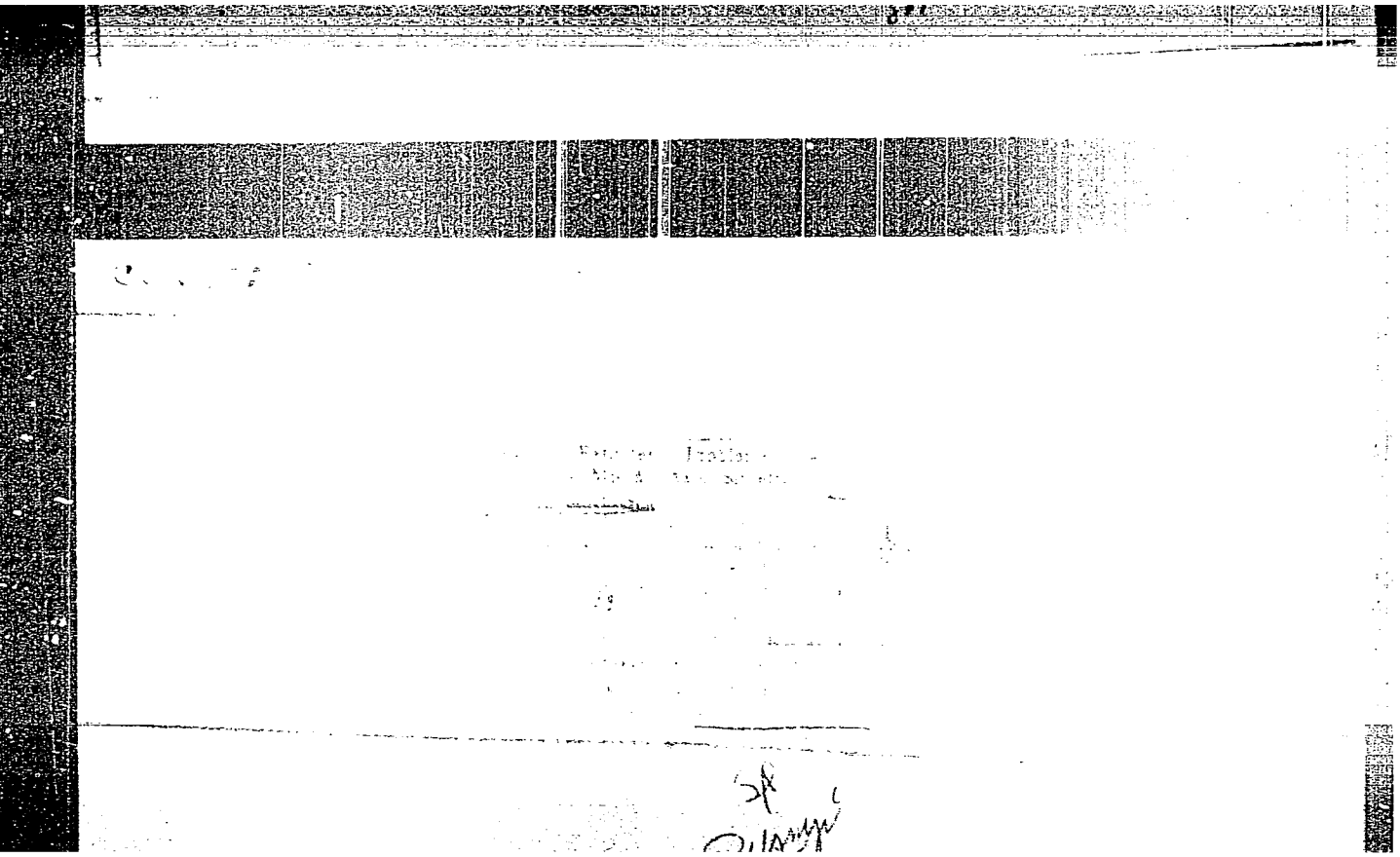
bearing. The notation and operating parameters will be unfamiliar to most English readers, but the results can be fairly readily transposed.

G. D. S. MacLellan, England

CONSTANTINESCU, V.

Considerations of the spin of airplanes. p. 73. STUDII SI CERCETARI DE MECANICA APLICATA. Bucuresti.
Vol. 6, no. 1/2, Jan/June 1956.

SOURCE: East European Accessions List, (EEAL), Library of Congress, Vol. 5, No. 11, November, 1956



CONSTANTINESCU, V. N.

Distribution of pressure in bearings of final dimensions, lubricated with gas. p. 655. Academia Republicii Populare Romine. COMUNICARILE. Bucuresti. Vol. 6, no. 5, May 1956.

SOURCE: East European Accessions List (EEAL) Library of Congress, Vol. 5, no. 9, Sept. 1955

Gheorghiu, N. et Constantinescu, V. N. ... surfaces sphériques. Com... A ... (1956), 531–536. (Romanian ... summaries)

The authors derive solutions ... the ... in the region bounded by ... spher... ... pressions are obtained in particular ... conditions. These solutions are ... proximate nature, ... [illegible]

A ...

CONSTANTINESCU, V.

CONSTANTINESCU, V. Considerations on the influence of the transfer of heat in the flow of gases in thin-laminated strata. p. 989.

Vol. 6, no. 8, Aug. 1956
COMUNICARILE.
SCIENCE
RUMANIA

So: East European Accession, Vol. 6, No.5, May 1957

CONSTANTINESCU, V.; TANASICIUC, C.; GRABARI, V.

Experimental determination of the load on the axles of railroad cars. p. 1051.

Academia Republicii Populare Romine. Institutul de Mecanica Aplicata.
STUDII SI CERCETARI DE MECANICA APLICATA. Bucuresti, Rumania. Vol. 8, no. 4, 1957.

Monthly list of East European Accessions (EEAI) LC, Vol. 8, no. 8, Aug. 1959

Uncl.

Constantinescu, V.

Stability of the motion of the circular bearings lubricated in turbulent state. p. 997.

Academia Republicii Populare Romine. STUDII SI CERCETARI DE MECANICA APLICATA. Bucuresti, Rumania. Vol. 9, no. 4, 1958.

Monthly List of East European Accessions (EEAL) LC Vol. 9, No. 2, January 1960.

Uncl.

CONSTANTINESCU, V.

Lubrication of spherical surfaces in nonpermanent conditions. p. 909.

COMUNICARILE. Bucuresti, Rumania. Vol. 8, no. 9, Sept. 1958

Monthly list of European Accessions (EEAI) LC, Vol. 8., no.,8, Aug. 1959

Uncl.

PHASE I BOOK EXPLOITATION RUM/3788

Cluj, Transylvania. Institutul Politehnic

Lucrări ştiinţifice (Scientific Works) Cluj, Intreprinderea Poligrafica, 1959. 657 p. Errata slip inserted. No. of copies printed not given. No contributors mentioned.

PURPOSE: This book is intended for mathematicians, physicists, chemists, and civil and mechanical engineers.

COVERAGE: The book consists of 59 papers by Rumanian specialists on problems in science and technology, particularly mathematics, physics, chemistry, metallurgy, civil and mechanical engineering. Summaries in Russian and French or German are given at the end of each article. Some of the articles are accompanied by references. No personalities are mentioned. At the back of the book there are 23 references, all Rumanian.

TABLE OF CONTENTS:

PART II. CONSTRUCTION

Avram, C. N. Continuous Beams. Influence Lines for the Mobile Pair N = 1 — 191

Avram, V., A. Iancou, Goldberger, and F. Földes. Aluminum-Silicate-Calcium Products From Ash and Slag Resulting From the Combustion of Pulverized Coal — 211

Ilie, V. Deformations and Forces in an Oblique Flat Plate — 219

Ilie, V., and C. Bia. A More Rigorous Method for Calculating Sectorial Geometric Characteristics of Thin-Walled Laminated Shapes Produced in the Rumanian People's Republic — 231

Munteanu, Gr. Determination of the Critical Speed in a Moving-Load Setup — 247

Mihăilescu, M. Cases in Which Soil Conditions Taken Into Account in the Design of Foundations Do Not Correspond to Actual Conditions and in Which Computed Settling Differs From Actual Settling — 259

Mihăilescu, M. Comparison of Measured Settling With Computed Settling of the Foundation of a Railroad Bridge — 271

Salvanu, V. Determination of Natural Illumination by Means of Lighting Grids — 283

Turcea, L., and O. Mirţu. Observations on Creep Strain in Concretes With Porous Aggregates (Clay and Expanded Slag) — 295

PART III. MECHANICS

Albu, A. Cam Design and the Planning of the Machining Process on a Single-Spindle Automatic Turret Lathe — 309

Albu, A. Behavior of Inserts of Bronze and Sintered Metal Powders Used for High-Speed Sliding Bearings With Loads On Many Points of Circumference — 329

Botha, A., and L. Botha. New Type of Blast Furnace — 343

Chiriţ, A. Investigation and Tests On the Substitution of Inserts Made of Nodular Cast Iron for Bronze Bushings in Freight Cars — 355

Chiriţ, A., Th. Albu, G. Hulpe, and St. C. Pop. Research and Tests on Bearing Bushings Made of Zinal (Zn-Al-Cu-Pb alloy) — 361

Chiriţ, A. Diesel Cylinder Jackets Made of Nodular Cast Iron — 381

Domşa, A., A. Palfalvi, and L. Botha. Experimental Tests on the Characteristics of Powders From [Ball] Bearing Steel and the Determination of Their Application — 387

Domşa, A., G. Müller, T. Dereczky, St. Kovács, and E. Colan. Investigating the Making of Sintered Contact Points for Electric Circuits — 397

Domşa, A. and Palfalvi. Investigation of Obtaining Iron Powder Type FRDM (Iron Reduced by Methane) — 411

Domşa, A., G. Müller, and V. Constantinescu. Investigating the Possibility of Using Some New Materials in the Production of Grinding Wheels With a Sintered Bond — 427

Constantinescu, V.

10.4000A

80414

RUM/8-59-1-7/24

AUTHOR: Constantinescu, V.N.

TITLE: On the Motion Stability of Circular Bearings Lubricated With Gases

PERIODICAL: Studii si Cercetări de Mecanică Aplicată, 1959, Nr 1, pp 117 - 140 (RUM)

ABSTRACT: Because of disturbances produced especially at high speed operation of gas-lubricated circular bearings, more or less efficient solutions have been proposed already [Refs 1 and 2]. The author has conducted some theoretical studies with the purpose of obtaining some criteria for the determination of nonstable zones of gas-lubricated bearings and for the determination of the factors effecting an influence on these zones. For this purpose, it is necessary to know the motion in a nonpermanent region, i.e. in case the relative speed between the surfaces and the load supported by the bearing varies in time. The general equation of the lubrification with gases, written in the hypothesis of a certain polytropic evolution of the lubrifying gas and in the usual condition of the problem of lubrification [Ref 3], is:

Card 1/ 11

80411

RUM/8-59-1-7/24

On the Motion Stability of Circular Bearings Lubricated With Gases

$$\frac{\partial}{\partial x}\left(\frac{\partial^3 \partial p^{\frac{1}{\varkappa}+1}}{\mu \partial x}\right)+\frac{\partial}{\partial z}\left(\frac{\delta^3 p^{\frac{1}{\varkappa}+1}}{\mu \partial z}\right)=6\left(\frac{1}{\varkappa}+1\right)\left\{2(V_{2y}-V_{1y})p^{\frac{1}{\varkappa}}-\right.$$

$$-p^{\frac{1}{\varkappa}}\left[(V_{2x}-V_{1x})\frac{\partial \delta}{\partial x}+(V_{2z}-V_{1z})\frac{\partial \delta}{\partial z}\right]+$$

$$\left.+\delta\left[\frac{\partial\left[p^{\frac{1}{\varkappa}}(V_{2x}+V_{1x})\right]}{\partial x}+\frac{\partial\left[p^{\frac{1}{\varkappa}}(V_{2z}+V_{1z})\right]}{\partial z}+2\frac{\partial p^{\frac{1}{\varkappa}}}{\partial t}\right]\right\}, \quad (1)$$

in which p = the pressure, δ = the thickness of the lubrifier layer, $\varkappa$ = the polytropic exponent of the evolution, and V_{1x}, V_{1y}, V_{1z}, respectively V_{2x}, V_{2y}, V_{2z} are the projections of the speeds $\overline{V_1}$ and $\overline{V_2}$ of both surfaces according to the reference directions x, y, z. The thickness of the lubrifier film of circular bearings is given by:

$$\delta = \Delta + e\cos\Theta = \Delta(1+\alpha\cos\Theta) \quad (2),$$

in which Δ is the radial clearance, e the excentricity, $\alpha = \frac{e}{\Delta}$ the relative excentricity, and the angle $\Theta = \frac{x}{r_1}$. After determining the projections of the speed, the author establishes the equation of circular

Card 2/11

On the Motion Stability of Circular Bearings Lubricated With Gases

bearings: $\frac{\partial}{\partial \epsilon}\left(\frac{\partial^3 \partial p}{\mu \partial \theta}\right) + r_1^2 \frac{\partial}{\partial z}\left(\frac{\delta^3 p}{\mu \partial z}\right) = 6 r_1^2 \left(\frac{1}{\chi_0} + 1\right)\left\{(\Omega_1 + \Omega_2)\right.$

$\frac{\partial (p \delta)}{\partial \theta} + 2\dot{\varphi} p \frac{\partial \delta}{\partial \theta} + 2 \frac{\partial (p \delta)}{\partial t}$ (7)

considering that $V_o = 0$. Ω_1 and Ω_2 are the revolution speeds. In the following paragraphs the author considers the case of a bidimensional motion in the lubrifying layer and examines then the motion stability in the cases of a constant load and a centrifugal load. Since the pressure equation:

$$\frac{\partial}{\partial \epsilon}\left(\frac{\partial^3 \partial p^2}{\mu \partial \theta}\right) = 12 r_1^2 \left[(\Omega_1 + \Omega_2) \frac{\partial (p \delta)}{\delta \theta} + 2\dot{\varphi} p \frac{\partial \delta}{\partial \theta} \right] \quad (8)$$

is very difficult to be solved, the author uses the method of disturbances recommended by J.S. Ausmann [Ref 4]. Considering that the pressure has the expression: $p = p_o + \alpha p_1 + \alpha^2 p_2 + \ldots$ (9)

Card 3/11 in which p_o is a reference pressure, he derives the pressure distribution,

On the Motion Stability of Circular Bearings Lubricated With Gases

limited only to the first two terms of (9):

$$p = p_o + \frac{\alpha \varphi \xi_\Delta \left(1 + \frac{2\dot{\varphi}}{\Omega_1 + \Omega_2}\right) p_o}{1 + \varphi \xi_\Delta^2} \left(\varphi \xi_\Delta + \sin\theta - \varphi \xi \cos\theta\right) \quad (17)$$

The resultants of the pressure in accordance with the direction of the lines of centers is:

$$P_t = -\int_0^{2} p \cos\theta \, r_1 \, d\theta = \frac{\alpha \pi \xi_\Delta \left(1 + \frac{2\dot{\varphi}}{\Omega_1 + \Omega_2}\right) p_o \, r_1}{1 + \xi_\Delta^2} \quad (18)$$

an in accordance with the normal direction:

$$P_n = \int_0^{2\pi} p \sin\theta \, r_1 \, d\theta = \frac{\alpha \pi \xi_\Delta \left(1 + \frac{2\dot{\varphi}}{\Omega_1 + \Omega_2}\right) p_o \, r_1}{1 + \xi_\Delta^2} \quad (19).$$

Card 4/11 Considering that $\dot{\varphi} = -\Omega_1$ and $\Omega_2 = 0$, the author obtains for:

On the Motion Stability of Circular Bearings Lubricated With Gases

$$p - p_o = -\frac{\alpha \varepsilon_\Delta p_o}{1 + \varepsilon_\Delta^2} (\varepsilon_\Delta + \sin\theta - \varepsilon_\Delta \cos\theta),$$

$$P_t = -\frac{\alpha\pi \varepsilon_\Delta^2 p_o r_1}{1 + \varepsilon_\Delta^2}; \quad P_n = -\frac{\alpha\pi \varepsilon_\Delta p_o r_1}{1 + \varepsilon_\Delta^2} \qquad (20).$$

In this case the pressure resultants rotate together with the spindle and in the same direction: it is the case of a centrifugal load. This situation is somehow similar to the case of a lubrication with liquids [Ref 3]. Moreover, the analogy with the liquid lubrication is not complete, since in that case only the super-pressure zone is considered, which changes. If the normal speed of both surfaces is sufficiently reduced to neglect the influence of $\frac{\partial}{\partial t}(p\vec{x}\partial)$, the results obtained for permanent regions, affected by the factor $1 + \frac{2\varphi}{\Omega_1 + \Omega_2}$ (21) can be used for dynamic regions. This conclusion permits the use of previously obtained results [Refs 6 and 7] for the computation of circular bearings. The author then establishes the equation of the motion stability of circular bearings, by using the method of small disturbances recommended

Card 5/11

On the Motion Stability of Circular Bearings Lubricated With Gases

by N. Tipei [Ref 3]: Considering a system of fix axes OXY and a mobile system $O_2x_tx_n$ with the origin in the bearing center (Figure 1), he obtains a compatibility condition of the equation system of motion: (Nr 22)

$$\begin{vmatrix} \Delta\nu^2 - (\dot{\gamma} - \dot{\vartheta}^*)^2\Delta + \frac{1}{m_1}\frac{\partial P_1 t}{\partial \alpha}, & \left[2\alpha\Delta(\dot{\gamma} - \dot{\vartheta}^*) + \frac{1}{m_1}\frac{\partial P_1 t}{\partial \dot{\vartheta}^*}\right]\nu - \frac{1}{m_1}\frac{\partial P_1 t}{\partial \vartheta^*} \\ -[2(\dot{\gamma} - \dot{\vartheta}^*)\nu + \ddot{\gamma} - \ddot{\vartheta}^*]\Delta - \frac{1}{m_1}\frac{\partial P_1 n}{\partial \alpha}, & \alpha\Delta\nu^2 + \left(2\dot{\alpha}\Delta - \frac{1}{m_1}\frac{\partial P_1 n}{\partial \dot{\vartheta}^*}\right)\nu - \frac{1}{m_1}\frac{\partial P_1 n}{\partial \vartheta^*} \end{vmatrix} = 0$$

in which $\vartheta^* = \gamma - \varphi$, (23)

and the disturbance of the excentricity α and that of the angle ϑ are considered to be:

$$\delta\alpha = \alpha^* e^{\nu t}\ ;\ \delta\vartheta^* = \vartheta^{**} e^{\nu t} \qquad (24)$$

In the determination (22) m_1 is the spindle mass, whereas P_{1t} and P_{1n} are the components on the directions t and n of the resultants of the pressure forces and external pressures. The determination (22) represents an equation of the 4th degree in ν of the following shape:

$$C_0\,\nu^4 + C_1\,\nu^3 + C_2\,\nu^2 + C_3\,\nu + C_4 = 0 \qquad (25).$$

Card 6/ 11

On the Motion Stability of Circular Bearings Lubricated With Gases

The conditions required by this system can be verified by the conditions of Rooth-Hurwitz. The dynamic stability of the operation of a gas lubricated bearing can be appreciated if the values γ, α, ϑ^* are known for the basic region and the forces P_1, P_2 and their variation in ratio with α and ϑ^*. The problem is determined if the derivates of the pressure resultants in ration with α, ϑ^*, and $\dot{\vartheta}^*$ are known. For the determination of these values the author considers the bidimensional motion and uses the conclusion of paragraph 1 and the results exposed in [Refs 6 and 7]. After determining the coefficients C_t and C_n by the Diagrams 2 and 3, and performing several other calculations, the author establishes the derivates of the P_{pl} pressure resultant which interfere in the relation (22):

$$\frac{\partial P_{p_1 t,n}}{\partial \alpha} = r_1 \left(1 + 2\frac{\dot{\gamma} - \dot{\vartheta}^*}{\Omega_1 + \Omega_2}\right) C_{t,n} \frac{\partial p_o}{\partial \alpha} + p_o r_1 \left(1 + 2\frac{\dot{\gamma} - \dot{\vartheta}^*}{\Omega_1 + \Omega_2}\right)\left[\frac{\partial C_{t,n}}{\partial \alpha} - \frac{\xi'}{p_o}\cdot\frac{\partial C_{t,n}}{\partial \xi'}\cdot\frac{\partial p_o}{\partial \alpha}\right], \quad (43)$$

Card 7/11

On the Motion Stability of Circular Bearings Lubricated With Gases

$$\frac{\partial P_{p_1 t,n}}{\partial \vartheta^*} = r_1 \left(1+2\frac{\dot{\varphi}-\dot{\vartheta}^*}{\Omega_1+\Omega_2}\right) C_{t,n} \frac{\partial p_o}{\partial \vartheta^*} - \frac{2p_o r_1}{\Omega_1+\Omega_2} C_{t,n} -$$

$$- r_1 p_o \left(1+2\frac{\dot{\varphi}-\dot{\vartheta}^*}{\Omega_1+\Omega_2}\right) \frac{\xi'}{p_o} \frac{\partial C_{t,n}}{\partial \xi'} \frac{\partial p_o}{\partial \vartheta^*} \qquad (43)$$

Considering p_o to be constant the above relations change into:

$$\left.\begin{aligned} \frac{\partial P_{p_1 t,n}}{\partial \alpha} &= p_o r_1 \left(1+2\frac{\dot{\varphi}-\dot{\vartheta}^*}{\Omega_1+\Omega_2}\right) \frac{\partial C_{t,n}}{\partial \alpha}, \\ \frac{\partial P_{p_1 t,n}}{\partial \vartheta^*} &= -\frac{2p_o r_1}{\Omega_1+\Omega_2} C_{t,n} \end{aligned}\right\} \qquad (44)$$

Card 8/11 Considering p_o to be a function of α and δ^*, the relation (43) changes into:

On the Motion Stability of Circular Bearings Lubricated With Gases

$$\left.\begin{aligned}
&\frac{\partial P_{p_1 t,n}}{\partial \alpha} = -p_o r_1 \left(1 + 2\frac{\dot{\vartheta} - \dot{\Theta}_*}{\Omega_1 + \Omega_2}\right)\frac{C_{t,n}}{\chi}\frac{\partial \chi}{\partial \alpha} + p_o r_1 \left(1 + 2\frac{\dot{\vartheta} - \dot{\Theta}_*}{\Omega_1 + \Omega_2}\right)\\
&\left[\frac{\partial C_{t,n}}{\partial \alpha} + \frac{\xi'}{\chi}\frac{\partial C_{t,n}}{\partial \xi'}\frac{\partial \chi}{\partial \alpha}\right] \simeq p_o r_1 \left(1 + 2\frac{\dot{\vartheta} - \dot{\Theta}_*}{\Omega_1 + \Omega_2}\right)\left(\frac{\partial C_{t,n}}{\partial \alpha} - \frac{C_{t,n}}{\chi}\frac{\partial \chi}{\partial \alpha}\right)\\
&\frac{\partial P_{p_1 t,n}}{\partial \Theta_*} = -\frac{2 p_o r_1}{\Omega_1 + \Omega_2}\xi'\frac{\partial C_{t,n}}{\partial \xi'}
\end{aligned}\right\} \quad (45)$$

The derivates which interfere with (22) can be computed by these relations and the coefficients of the equation in (25) can be determined. The author then applies these results to the following two operational regions: constant load and centrifugal load. If p_o is constant, the condition (28) can be expressed:

$$(C_1 C_2 - C_3)C_3 - C_1^2 C_4 \simeq -C_1^2 C_4 < 0 \qquad (53)$$

The motion of gas lubricated bearings of infinite extension with constant loads is unstable. But it is possible that the real situation should be

Card 9/ 11

On the Motion Stability of Circular Bearings Lubricated With Gases

more favorable, partially due to the fact that the finite extension could have a stabilizing effect and partially due to the introduced covering approximation. Some special constructional solutions are necessary to guarantee the motion stability. In case of a centrifugal load where $\Omega_2 = 0$, $j = -\Omega_1 = \text{constant}$, $\ddot{\gamma} = 0$, $\vartheta^* = \dot{\theta}^* = 0$, and the equation in ν (54) is derived from (22), the condition (28) is expressed in a similar way as in the preceding case. If p_0 is variable, the motion is unstable for $\xi' > 1.4$, since the coefficient C_1 becomes negative. The more ξ' increases, this condition is not fulfilled since C_1 and C_2 tend towards 0. The motion stability can be achieved for some regions in function of ξ', m_1, Δ, but the motion becomes unstable at high ξ' values. The motion stability of air lubricated circular bearings is generally not guaranteed at especially high and very high speeds. The behavior is a little better in case of dynamic (centrifugal) loads, at average speeds and certain values for the masses in motion and for the relative dimensions of the bearings. The main factors causing the motion unstability are the compressibility and especially the formation of depression zones in the lubrication stratum. To eliminate these deficiencies, the author recommends the use of multi-

Card 10/11 stage bearings [Ref 1], or the use of a lubricator feed under pressure

On the Motion Stability of Circular Bearings Lubricated With Gases

[Ref 2]. In case of centrifugal loads at higher excentricities, the pehnomenon can be another one. Very high depressions and even negative pressures can appear which are physically not acceptible. In such cases the problem has to be reposed, considering $p \rightarrow 0$ in the regions where negative pressure would result.
There are: 10 graphs and 9 references, 2 of which are English, 2 French, 2 Rumanian, 2 Russian and 1 German.

SUBMITTED: October 2, 1959

Card 11/11

~~25(2)~~ 25.2000

68883
R/009/59/11/006/051
D0019/D3001

AUTHOR: Constantinescu, V.N., Engineer, Chief of Laboratory

TITLE: Air Lubricated Bearings

PERIODICAL: Metalurgia şi Construcţia de Maşini, 1959, Nr 11, pp 959 - 966

ABSTRACT: The importance of gas lubricated bearings increased during the last few years because of the following advantages: excellent behavior at very low, very high and average temperatures; low friction, thus enabling high revolution speeds, from 80,000 to 250,000 rpm; low operation temperature, approx 3-4°C at 30,000 - 40,000 rpm; low rate of wear. Gas lubricated bearings can operate for several 10,000 hrs [Ref 1]. The author briefly describes some operation principles of gas lubricated bearings, establishes the difference between gas lubricated

Card 1/3

Air Lubricated Bearings

and liquid lubricated bearings and explains the pressure distribution by appropriate equations. Gas lubricated bearings can be used in machines with very high revolution speeds, e.g. gyroscopes, centrifugal apparatus, spinning machines, glass cutting machines, grinding machines, etc. The pneumatic motor designed by the Institutul de Mecanică Aplicată al Academiei RPR (Institute of Applied Mechanics of the Rumanian Academy) with a speed of 56,000 rpm / Fig 15 / and the Soviet super-centrifugal apparatus with 22,000 rpm / Fig 16 / are equipped with gas lubricated bearings. Heavy machines, such as turbo-compressors, gas and steam turbines will be equipped with gas lubricated bearings in the near future. Gas lubricated bearings give excellent results at very low temperatures as, for instance in artificial satellites and rockets. They can also be used in measuring and control apparatus and installations. By using a pressure feed, a thin gas film can be produced between the

Card 2/3

68843

Air Lubricated Bearings

R/009/59/11/006/051
D0019/D3001

surfaces at an operation speed of relatively zero. [Ref 3]. There are 3 photos, 3 figures, 2 sets of figures, 10 graphs and 9 Rumanian references.

ASSOCIATION: Secţia de Maşini şi Mecanisme, Institutul de Mecanică Aplicată, (Machine and Mechanism Section, Institute of Applied Mechanics)

Card 3/3

CONSTANTINESCU, V.

Computation of bearings, composed of plane surfaces, lubricated in turbulent flow. p.755

STUDII SI CERCETARI DE MECANICA APLICATA. Academia Republicii Populare Romine
Bucuresti, Rumania
Vol. 10, no.3, 1959

Monthly List of East European Accessions (EEAI) LC., Vol. 9, no.1, Jan. 1960
Uncl.

85618

R/008/60/000/001/008/009
A125/A026

13,2520

AUTHORS: Constantinescu, V.N., and Marin, Gh.

TITLE: Pneumatic Motor With Air Lubricated Bearings

PERIODICAL: Studii şi Cercetări de Mecanică Aplicată, 1960, No. 1, pp. 291-296

TEXT: For the experimental study of the operation of air lubricated bearings, the Institutul de mecanică aplicată (Institute of Applied Mechanics) designed a pneumatic motor with air lubricated bearings (Fig. 1). The rotor (1) is supported by two radial and two axial bearings. The active part of the rotor, the turbine, has been made by grinding some grooves into the rotor block. Two rotor types have been made, one conical (Fig. 1) and one cylindrical. The rotor is fed with compressed air through 13 nozzles, radially distributed in the casing (2). In case of a conical rotor, the casing is at the same time the axial bearing, fed under pressure. The second axial bearing (3) is made of a circular plane plate, provided with nozzles. The two radial bearings (4), (5) consist of a bushing each, assembled in a control system which allows a fastening of the bushings in position as close to the axis as possible, by tightening the nut (7) on the spherical surface of the intermediate bushing

Card 1/3

Pneumatic Motor With Air Lubricated Bearings

(16). The casing consists of two parts (9) and (10). The radial bearings have a diameter of 14 mm, a width of 28 mm and a radial tolerance of 1.2 °/oo. The maximum lifting capacity of the air lubricated to a minimum thickness of the lubrifying layer of 2 μ (Fig. 2). Each bearing can support 5 kg at 20,000 rpm and 10 kg at 60,000 rpm. The power consumption by friction is 4 w at 40,000 rpm and 10 w at 60,000 rpm (Fig. 3). Figure 3 also presents the power consumed by a bearing supposing that the bearing is completely unloaded and traced with a maximum load, equal to a minimum air lubricant layer of 2 μ. Figure 4 shows the power consumption of the bearing No. 3, supposing that it is controlled for a tolerance of 0.1 mm or 0.5 mm respectively. Figure 5 shows the power consumption by friction of the apparatus at different rates of revolution. The radial bearings can also be fed under pressure. The motor has a stable operation, the maximum speed attained being 56,000 rpm. The operation is equally good in every position of the motor. The warming up is low. The radial bearings operate well also in case they are fed under pressure. Steel, bronze and cast iron has been used as bearing material. The installation will be used for